



**American Water Works
Association**

The Authoritative Resource on Safe WaterSM

ANSI/AWWA B504-05
(Revision of ANSI/AWWA B504-01)

AWWA Standard

Monosodium Phosphate, Anhydrous



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Foreword

This Foreword is for information only and is not a part of ANSI/AWWA B504.

I. Introduction.

I.A. *Background.* Monosodium phosphate, anhydrous, is a manufactured product obtained by combining a comparatively pure chemical—soda ash (Na_2CO_3) or caustic soda (NaOH)—with phosphoric acid (H_3PO_4). The resulting product is dried, sized, and packaged.

Monosodium phosphate, anhydrous, is a white, crystalline solid, commercially available in granular and powder forms. A solution of 2 lb/gal (0.24 kg/L) has a specific gravity of approximately 1.15 at 25°C.

For information on safety, refer to material safety data sheets (MSDS) available from the supplier or manufacturer.

I.B. *History.* In 1985, the AWWA Standards Committee on Scale and Corrosion-Control Chemicals recognized the need for a standard for monosodium phosphate, anhydrous, used as a corrosion-control product in the treatment of potable water. The AWWA Standards Council authorized development of this standard on Nov. 18, 1985, and the first edition was approved on Jan. 25, 1988. The second edition of the standard was approved on June 19, 1994. The third edition of the standard was approved on Jan. 21, 2001. This fourth edition of ANSI/AWWA B504 was approved by the AWWA Board of Directors on June 12, 2005.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the consortium included the American Water Works Association Research Foundation (AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.* Local agencies may choose to impose requirements more stringent than those required by the state. To evaluate the health

*Persons outside the United States should contact the appropriate authority having jurisdiction.

effects of products and drinking water additives from such products, state and local agencies may use various references, including two standards developed under the direction of NSF, NSF*/ANSI† 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI 60. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdiction. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, “Toxicology Review and Evaluation Procedures,” to NSF/ANSI 60 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of “unregulated contaminants” are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA B504 addresses additives requirements in Sec. 4.3 of the standard. The transfer of contaminants from chemicals to processed water or the residual solids is becoming a problem of greater concern. The language in Sec. 4.3.3 is a recommendation only for direct additives used in the treatment of potable water to be certified by an accredited certification organization in accordance with NSF/ANSI 60, Drinking Water Treatment Chemicals—Health Effects. However, users of the standard may opt to make this certification a requirement for the product. Users of this standard should also consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.
2. Determine the status of certifications by all parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Storage and Handling Precautions.* Monosodium phosphate, anhydrous, is slightly deliquescent in nature and must be stored under dry conditions. Exposure to humidity produces a caked condition. This results in poor flow and caking that

*NSF International, 789 N. Dixboro Road, Ann Arbor, MI 48105.

†American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

interferes with the rate of dilution. Refer to the MSDS available from the manufacturer or supplier for additional information.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. Purchaser Options and Alternatives. The following items should be provided by the purchaser:

1. Standard used—that is, ANSI/AWWA B504, Standard for Monosodium Phosphate, Anhydrous, of latest revision.
2. Whether compliance with NSF/ANSI 60, Drinking Water Treatment Chemicals—Health Effects, is required.
3. Physical form(s) and quantity (Sec. 4.1.1).
4. Specific maximum impurity content limits, if required (Sec. 4.3).
5. Size and type of container to be used (Sec. 6.2).
6. Affidavit of compliance, or certified analysis, or both, if required (Sec. 6.3).

III.B. Modification to Standard. Any modification to the provisions, definitions, or terminology in this standard must be provided by the purchaser.

IV. Major Revisions. No major revisions have been made to this standard.

V. Comments. If you have any comments or questions about this standard, please call the AWWA Volunteer and Technical Support Group, 303.794.7711, FAX 303.795.7603, write to the group at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.

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AWWA Standard

Monosodium Phosphate, Anhydrous

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes monosodium phosphate, anhydrous, for water supply service. The product described is an orthophosphate used as formulated and in blends to inhibit corrosion of potable water conveyance systems. The product described by this standard is also known as sodium phosphate, monobasic, anhydrous.

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for monosodium phosphate, anhydrous, including physical, chemical, packaging, shipping, and testing requirements.

Sec. 1.3 Application

This standard can be referenced in specifications for purchasing and receiving monosodium phosphate, anhydrous, and can be used as a guide for testing the physical and chemical properties of monosodium phosphate, anhydrous, samples. The stipulations of this standard apply when this document has been referenced and only to monosodium phosphate, anhydrous, used in water supply service.